

## Cooling Methods Fact Sheet

Sometimes it is necessary to prepare or cook foods in advance and store them for later use. Certain steps must be followed in order to prevent foodborne bacteria from growing during the cooling process. There are two methods to cool potentially hazardous foods safely: the two-stage method and the one-stage method.

- The *two-stage method* reduces the cooked food's internal temperature in two steps. The first step is to reduce the temperature from 135°F to 70°F within two hours of preparation; the second step is to reduce the temperature from 70°F to 41°F or colder within an additional four-hour period. Total cooling time should never exceed six hours.
- The *one-stage method* is designed to reduce the prepared food's internal temperature from 70°F to 41°F or colder within four hours of preparation. This method should only be used if the food is prepared from ingredients at room temperature, such as canned tuna or reconstituted foods such as powdered milk.

When deciding how best to cool potentially hazardous foods, keep in mind the following factors:

- The size and amount of food being cooled,
- The density of the food (a broth is less dense than a casserole), and
- The container in which the food is being stored (shallow pans cool foods faster than deep pans).

These are some of the steps that may be taken to speed up the cooling process:

- Place the food to be cooled in shallow pans,
- Separate the food to be cooled into smaller or thinner portions,
- Use rapid cooling equipment, such as "blast chillers",
- Stir the food to be cooled in a container placed in an ice bath,
- Use metal storage containers when possible; they transfer heat more rapidly,
- Do not cover the container with a lid or plastic wrap while in the refrigerator or freezer until the food has cooled to 41°F, or
- Add ice as an ingredient to the cooked food.

The most important thing to remember about cooling foods is that the temperature of all cooked foods should be reduced to 41°F or colder as quickly as possible. **Simply placing a cooked food item in a refrigerator to cool may not be sufficient to reduce the threat of bacterial growth.** It is necessary to use a food thermometer to take temperatures regularly as the food cools and to take steps to speed up the process if the food is not cooling quickly enough. It is recommended that a cooling log be kept to track the cooling food temperatures, regardless of the cooling method used. Once the food item has been properly cooled, it should be stored properly – covered and labeled with the preparation date and the discard date of the food. Cooling logs are available from the Environmental Health website at [www.tillamookchc.org/eh](http://www.tillamookchc.org/eh). More cooling information is available on the website or by calling 503-842-3909.